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**Supplementary Table 1. Search 1 study characteristics**

	Name	Year	N	Mean Age (yrs)	Sex (% f)	Abstinence Period (hrs)	Mean FTND	Minimum Cig/ Day	Mean Baseline CO (ppm)	Cognitive Tasks	Effect Size d*	Variance
1	Al' Absi	2002	30	25	50%	18	5.3	15	19.0	Mental Arithmetic	0.39	0.04
										Paced Auditory Serial Addition	0.61	0.04
2	Ashare	2012	56	40	52%	14	5.3	10	34.5	Delay Discounting	0.09	0.02
										Startle Continuous Performance	0.46	0.02
										Stop Signal	0.34	0.02
3	Ashare	2015	33	39	36%	24	4.7	10	19.4	Delay Discounting	0.08	0.03
4	Canamar	2012	51	37	37%	13	5.3	15	24.3	Smoking Stroop	<0.01	0.02
5	Charles- Walsh	2014	22	26	50%	10	-	15	26.2	Stop Signal	0.70	0.03
6	Domier	2007	43	37	42%	13	5.1	15	24	Stroop	0.02	0.02
										Letter Series	0.40	0.05
7	Elgerot	1976	12	-	33%	15	-	15	-	Mental Arithmetic	0.88	0.06
										Raven's Progressive Matrices	0.50	0.05
8	Field	2004	23	22	43%	10	3.8	-	17.2	Dot Probe	-	-
										Delay Discounting	0.46	0.04
9	Field	2006	31	23	48%	13	3.6	10	-	Behavioural Economics	-	-
										Gambling	-	-
10	Freeman	2012	48	27	40%	12	4.7	10	-	Drug Cue Reward Prediction Error	-	-
										Dot Probe	0.32	0.08

	Name	Year	N	Mean Age (yrs)	Sex (% f)	Abstinence Period (hrs)	Mean FTND	Minimum Cig/ Day	Mean Baseline CO (ppm)	Cognitive Tasks	Effect Size d*	Variance
11	Greenstein	2009	23	30	0%	12	4.4	10	13.0	N-back	-	-
										O-span	-0.48	0.04
										S-span	-	-
12	Harrison	2009	30	32	50%	17	5.1	10	25.0	Connor's Continuous Performance	0.47	0.04
										Go/no-go	0.44	0.04
13	Hatsukami	1989	19	22	53%	24	-	10	-	Digit Span	-0.79	0.13
										Trial Making	0.85	0.14
										Symbol Digit Modalities	-0.27	0.10
										Vigilance	-0.18	0.10
14	Havermans	2003	36	23	-	12	4.1	10	-	Digit Span	-	-
										Sternberg	-	-
15	Heinz	2007	60	34	50%	12	5.7	15	-	Rapid Serial Visual Attention	-	-
16	Hirshman	2004	20	23	45%	24	5.9	-	17.0	Digit Span	-	-
										Recognition Memory	0.60	0.05
										Visual Attention	-	-
17	Hughes	1989	16	-	0%	24	-	20	-	Digit Span	-	-
										Sustained Attention	-	-
										Visual Attentional Vigilance	-	-
18	Leventhal	2008	113	24	62%	12	3.8	10	-	Subliminal Priming Smoking Stimuli	-0.26	0.02

	Name	Year	N	Mean Age (yrs)	Sex (% f)	Abstinence Period (hrs)	Mean FTND	Minimum Cig/ Day	Mean Baseline CO (ppm)	Cognitive Tasks	Effect Size d*	Variance
19	Leventhal	2010	203	36	50%	12	6.5	15	30	Digit Symbol Substitution	-0.13	<0.01
										Dot Probe	0.17	<0.01
										Rapid Information Processing	0.25	<0.01
										Mental Arithmetic	0.17	<0.01
										Smoking Stroop	0.05	<0.01
										Two- letter Search	0.45	<0.01
20	Leventhal	2012	75	42	28%	18	5.3	10	29	Emotional Interference Gender Identification	-	-
21	Lydon	2015	18	32	28%	12	2.6	-	12.6	Incentivised Go/no-go	0.18	0.05
22	Mitchell	2004	11	20	45%	24	5.0	15	23.4			
23	Mendrek	2006	15	35	40%	13	5.1	15	21.9	N-back	0.59	0.08
24	Merritt	2010	25	-	52%	24	-	-	14.6	Digit Span	0.09	0.04
										Recognition Memory	0.38	0.04
										Spatial Orienting	<0.01	0.02
25	Merritt	2012	25	23	52%	24	4.4	-	14	Recognition Memory	0.43	0.04
26	Mogg	2002	27	33	51%	12	3.9	10	-	Dot Probe	0.01	0.04
										Smoking Stroop	<0.01	0.04
										Stroop	0.02	0.04
27	Munafò	2003	43	28	51%	24	2.2	1	17.8	Smoking Stroop	0.39	0.09
28	Oliver	2012	70	37	41%	12	-	10	35.5	Odd-one Out	0.18	0.06
29	Parrott	1991	20	-	40%	12	-	15	-	Letter Cancellation	0.33	0.04
30	Parrott	1998	30	25	53%	12	-	10	-	Letter Cancellation	0.36	0.04

	Name	Year	N	Mean Age (yrs)	Sex (% females)	Abstinence Period (hrs)	Mean FTND	Minimum Cig/ Day	Mean Baseline CO (ppm)	Cognitive Tasks	Effect Size d*	Variance
										Mental Arithmetic	0.22	0.13
31	Pomerleau	1994	13	28	100%	12	5.9	15	-	Stroop	0.66	0.08
										CARROT	0.54	0.04
32	Powell	2002	26	24	50%	10	3.7	-	20	Saccade/antisaccade Eye Movement	-	-
										Verbal Fluency	0.20	0.04
										Reversed Digit Span	-	-
33	Powell	2002	21	23	57%	12	-	10	18.2	Emotional Stroop	-0.84	0.07
34	Roewer	2015	37	33	41%	24	7.2	25	16.1	Delay Discounting	0.25	0.03
35	Roth	1992	20	-	100%	8	-	-	27	Austin Maze		-
										Word Recognition		-
36	Rusted	1998	15	25	47%	8	4.0	-	14.8	Progressive Ratio	0.71	0.08
										Rapid Visual Information	0.59	0.08
37	Sayette	1994	40	21	70%	12	-	-	-	Cue Exposure Task	-0.17	0.06
38	Shirtcliff	2003	26	-	-	96	-	15	-	Cued Target Detection	-	-
39	Soar	2008	40	28	50%	12	-	-	-	Auditory Verbal Learning	0.15	0.03
40	Waters	2000	24	-	-	24	-	7	-	Smoking Stroop	-0.90	0.21
41	Yi	2012	28	40	28%	24	6.4	20	19.4	Delay Discounting	0.65	0.04
42	Zvolensky	2014	258	44	30%	16	5.2	10	-	Relapse Analogue	0.77	<0.01

\*a positive value of d indicates an effect in the expected direction (i.e., worse cognitive performance, higher attentional bias, or higher impulsivity in abstinent as compared with satiated smokers).